DOCUMENT RESUME

ED 460 812 RC 023 341

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TITLE Indigenous Knowledge for Development: Opportunities and Challenges.
INSTITUTION World Bank, Washington, DC.
PUB DATE 2001-00-00
NOTE 10p.; Contains small print.
AVAILABLE FROM For full text: http://www.worldbank.org/afr/ik/ikpaper_0102.pdf.
PUB TYPE Opinion Papers (120)
EDRS PRICE EDRS Price MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS *Appropriate Technology; Case Studies; *Community Development; Community Organizations; Developing Nations; Economically Disadvantaged; Empowerment; Foreign Countries; Information Dissemination; *Institutional Cooperation; *Nonformal Education; Nongovernmental Organizations; Rural Areas; Social Capital; *Sustainable Development
IDENTIFIERS *Indigenous Knowledge Systems; *Local Control; World Bank

ABSTRACT

Indigenous knowledge is a critical factor for sustainable development. Empowerment of local communities is a prerequisite for the integration of indigenous knowledge in the development process. The integration of appropriate indigenous knowledge systems into development programs has already contributed to efficiency, effectiveness, and sustainable development impact. Indigenous knowledge, like any other knowledge, needs to be constantly used, challenged, and further adapted to evolving local contexts. Supporting local and regional networks of traditional practitioner and community exchanges can help disseminate relevant indigenous knowledge and enable communities to participate more actively in the development process. While innovative mechanisms for the protection of indigenous intellectual property rights need to be developed, many indigenous knowledge practices can at the same time be integrated into local, national, regional, or global development efforts. However, experience has shown that this cannot be done by one institution alone. Partnerships between community-based organizations, nongovernmental organizations, academia, the private sector, research, government, and donor institutions are needed to enhance the use of indigenous knowledge for development. The Indigenous Knowledge for Development Program of the World Bank will continue to champion indigenous knowledge and join others in their efforts to harness indigenous knowledge for development in a process of continuous learning from local communities. Numerous examples are given of the successful implementation of indigenous knowledge in the areas of health care, agriculture, education, and women's issues by communities and governments in Africa, India, and South America. (TD)

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Indigenous Knowledge for Development: Opportunities and Challenges

Nicolas Gorjestani

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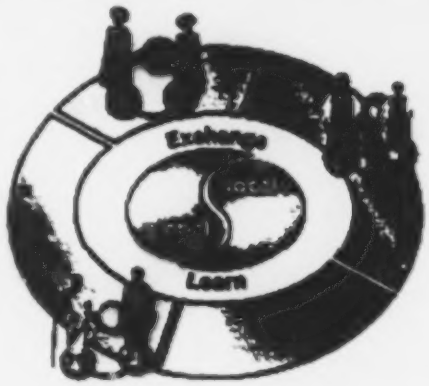
Indigenous Knowledge for Development

Opportunities and Challenges

Nicolas Gorjestani

Indigenous Knowledge
for Development Program
The World Bank

This paper introduces indigenous knowledge (IK) as a significant resource which could contribute to the increased efficiency, effectiveness and sustainability of the development process. IK is defined as the basis for community-level decision making in areas pertaining to food security, human and animal health, education, natural resource management and other vital economic and social activities. Several good practice cases will demonstrate the value added by IK to development in the productive as well as social sectors. An overview of the World Bank's Indigenous Knowledge for Development Program describes the objectives, some of the achievements and the challenges ahead. Further cases will demonstrate how some of these challenges can be met. In conclusion, the paper argues that the harnessing of IK empowers local communities and could help improve aid effectiveness in poverty reduction.



Indigenous knowledge (IK) is used at the local level by communities as the basis for decisions pertaining to food security, human and animal health, education, natural resources management, and other vital activities. IK is a key element of the social capital of the poor and constitutes their main asset in their efforts to gain control of their own lives. For these reasons, the potential contribution of IK to locally managed, sustainable and cost-effective survival strategies should be promoted in the development process.[1] To facilitate the integration of IK into operations, the African department of the World Bank launched the Indigenous Knowledge for Development Program in 1998. This paper reflects on the Program's experiences over the last three years and the steps that could be taken to further assist communities and governments to integrate indigenous knowledge into the development process.

"Indigenous knowledge is an integral part of the culture and history of a local community. We need to learn from local communities to enrich the development process".

James D. Wolfensohn, President of the World Bank

The development case for indigenous knowledge

The potential development impact of indigenous knowledge systems can be gauged by a few examples of what IK has already achieved. After fifteen years of civil war, community leaders in Mozambique reportedly managed about 500,000 informal "land transactions" and helped in the settlement of about 5 million refugees and displaced persons in two years. Most significantly, they achieved this without direct external

1 Indigenous knowledge is not confined to indigenous peoples alone—all communities have developed their own body of knowledge over generations.

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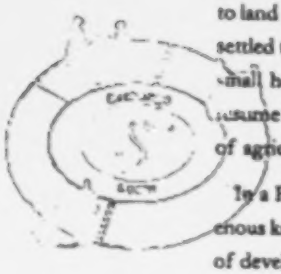
help from donors or central government. How did this happen? Traditional, local authorities relied on indigenous, customary laws to resolve potential conflicts arising from competing claims to land by returning refugees and those who had settled the lands during the civil war. As a result, small holders were able to quickly resettle and resume farming and contribute to the growth of agricultural production.



In a Food for Work Program in Nepal, indigenous knowledge has been a more effective agent of development than modern technology. A donor-assisted food distribution program was incurring major losses of food along the distribution line. The project managers turned to the local community for solutions. It was jointly determined that using local equipment (e.g., bullock carts), distributors, and community-based supervision would be the most appropriate way to distribute the food in the local context. Hiring local bullock carts in place of the covered trucks operated by city-based companies provided additional income for rural communities and improved transparency of the distribution process.[2]

Box 1

In the Iganga district of Uganda, leveraging traditional knowledge systems with simple and appropriate modern communications helped to dramatically reduce high maternal mortality rates. In the past, traditional care could not assist in complicated cases and the modern health service delivery system reached less than half the population of the district. To address the high mortality rates, local communities and officials built on the local traditional institutions to improve the reach and impact of modern prenatal and maternal healthcare services. The local initiative used and leveraged the system known and trusted by Ugandan women—the traditional birth attendant (TBA). The project provided the TBAs with walkie-talkies to communicate with public health service workers from their outposts. This enabled the TBAs in remote areas to become the referral system to modern healthcare. In cases of complications or emergencies, the TBA could now call in the modern mobile unit or refer the patient to the rural health center. As a result, maternal mortality in the Iganga district reportedly declined by 50 percent in three years!*

* Musoke, M. (1999). "The Challenge and Opportunities of Information and Communication Technologies (ICTs) in the Health Sector." Prepared for the African Development Forum (ADF) '99; Makerere University, Kampala.

In Senegal, external partners had for years engaged the country authorities to abolish female genital mutilation (FGM), though with little success. Indigenous knowledge and empowerment of community groups eventually made a national impact. After attending an adult literacy course conducted by TOSTAN, a local NGO, a group of women from a village called Malicounda decided to address the issue in their communities. They convinced the traditional spiritual leaders to join their campaign against the practice. Within two years these empowered women had convinced sixteen neighboring communities to abolish the practice. As a result of the growing impact of the Malicounda initiative, by the end of 1999 the practice was declared illegal in Senegal. The Malicounda initiative has spread to other groups in the neighboring countries where already more than 200 communities have abolished FGM.[3]

Indigenous institutions, indigenous appropriate technology, and low-cost approaches can increase the efficiency of development programs because IK is a locally owned and managed resource.[4] Building on IK can be particularly effective in helping to reach the poor since IK is often the only asset they control, and certainly one with which they are very familiar. Utilizing IK helps to increase the sustainability of development efforts because the IK integration process provides for mutual learning and adaptation, which in turn contributes to the empowerment of local communities. Since efficiency, effectiveness, and sustainability are key determinants of the quality of development work, harnessing indigenous knowledge has a clear development business case. Early indications point to significant improvements in development project quality if IK is leveraged with modern technologies. The example from an UNFPA-supported program in Uganda supports this proposition (Box 1).

2 Meagher, P. Upadhyaya, K., Wilkinson, B. (2000). "Combating Rural Public Works Corruption: Food-for-Work Programs in Nepal" IRIS Center Working Paper #239, College Park, Maryland.

3 Easton, P. (1998 and 2001). IK-Notes #3 "Senegalese Women Remake Their Culture" and IK Notes #31 "Malicounda-Bambara: The Sequel", The World Bank, Washington DC.

4 While it may initially be more expensive to study and understand relevant IK practices, the costs of development programs can be reduced substantially where local means or community-based resources (human and biophysical) can be utilized.

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Building on IK systems also empowers local communities. Empowerment, especially of the poor, is a core objective of most development efforts. The case from India (Box 2) shows how farming communities were able to leverage indigenous and global knowledge locally, and build a network of practitioners that engaged the agricultural administration and research in a dialogue of partners. The empowerment of these communities is demonstrated in the impact of their efforts, the application of their own knowledge to address a critical problem, and their effective engagement of assistance from authorities and donors

Box 2

In India, the World Bank-supported Sodic Lands Reclamation Project is a farmer-driven effort to increase household incomes. The major constraints were sodic soils, a result of inappropriate irrigation management and brown plant hoppers, which often destroyed up to 50 percent of paddy and wheat crops. By combining local and modern knowledge, farmers applied gypsum, built contour bunds, leached the soil, started multi-cropping, green manuring, crop rotation and composting, and reclaimed over 68,000 hectares of land belonging to 247,000 families. They controlled brown plant hoppers with Neem[1] extract, rice husk and green manure. After five years, paddy and wheat yields and incomes had reportedly risen by 60 percent. With World Bank support, farmers created a local farmers school to incorporate these practices into curriculum and outreach work. Today, farmers train and advise fellow farmers, reaching over 7,200 households in 65 villages. Recognizing and incorporating IK has not only produced technical and economic results, but has helped to create a farmer-owned training institution with tremendous credibility and outreach.

[1] The Neem tree (Azadirachta indica) has been used in India for centuries in a variety of applications related to human and animal treatments and as a means to control insect pest.

Building on such examples, several teams in the World Bank now seek to leverage global and local knowledge systems to adapt the design of Bank-supported projects and programs to local conditions. Eventually, more communities will shape their own agenda by actively participating in the development dialogue and enhancing good governance from below. Helping communities to value their own knowledge and, in turn, learning from it, enhances the Bank's own knowledge. The Indigenous Knowledge for Development Program operates within this context.

The Indigenous Knowledge for Development Program of the World Bank's Africa Region

At the first Global Knowledge Conference in June 1997 in Toronto, government leaders and civil society groups urged the World Bank and other donors to learn from local communities. In concluding remarks to the Conference, the Vice President of the World Bank's African Region, supported a vision of global knowledge partnership that will be realized only when the poor participate as both users of and contributors to knowledge.

Around the same time, results of client feedback surveys conducted by the World Bank in several African countries indicated that country authorities and stakeholders wanted Bank staff to do better in adapting their highly regarded technical expertise to local conditions. The African Department of the World Bank responded to these challenges by launching the Indigenous Knowledge for Development Program in partnership with over a dozen organizations in 1998.[5]

The IK Program has developed a number of instruments and services for the capture, dissemination and application of these practices. These include: the creation of an IK database of over 200 indigenous practices; a monthly publication, "IK Notes," appearing in two international languages (English, French) and two local languages (Wolof, Swahili), with over 20,000 readers; and a multilingual website.[6] The program has also helped IK Resource Centers in eight countries to improve their national and regional networking capacity. For example, Uganda received advisory and financial support to help draft a national

[5] The initial partners were ECA, CISDA (Centre for Information Society Development in Africa), IDRC, ITU, UNESCO, UNDP, and WHO. The IK Program cooperates with other organizations, including: CIRAN (Centre for International Research and Advisory Networks) at Nuffic (Netherlands Organization for International Cooperation in Higher Education), FAO, GM/CCD (Global Mechanism of the Convention to Combat Desertification), GTZ, IFAD, ILO, SDC, UNCED, WIPO, and numerous NGOs and CBOs mainly in Africa.

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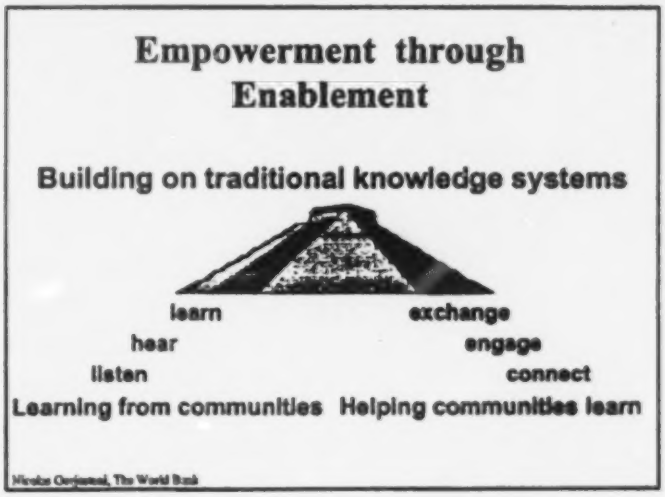

strategy for the integration of IK into its national Poverty Eradication Action Program and grant funding to build capacity for the implementation of the strategy. Other countries have undertaken various activities to build on IK in agriculture, healthcare, and education with the assistance of the IK Program. In cooperation with other agencies (SDC and GM/CCD), local communities have been supported in sharing their IK through community-to-community (C2C) exchanges. The IK Program has also brokered partnerships between scientists, legal experts, and IK practitioners to support scientific validation of IK practices, and supported IK practitioners to form national or regional traditional knowledge networks.

The IK Program promotes the integration of IK systems into World Bank-supported programs. For example, the Agricultural Research and Training Project (ARTP II) in Uganda plans to explore the use of IK in agriculture to make them part of their outreach program. Practices include the use of small farm implements designed for the smaller cattle of Uganda, such as the improved Ugandan plow. In the Ugandan National Agricultural Advisory Services Program, a team interviewed communities and farmers to devise a performance monitoring system based on IK indicators. In Malawi, IK of farmers and fishermen will be merged with scientific knowledge to improve the sustainable use of the Lake Malawi Basin resources. In Eritrea, IK practices in early childhood care were studied for their eventual promotion and dissemination. In Kenya, Ethiopia and Ghana, projects are under way to promote medicinal plants as an integral part of health-related IK to provide alternative sources of income and to maintain and protect biodiversity.

The IK Program's role in these cases was to provide methodological input, brokerage of knowledge or funding for targeted studies. The lessons of these projects will be used to further mainstream and replicate the integration of IK during the preparation of projects in the future.

Challenges ahead

Considerable progress has been made in promoting IK: recognition of indigenous knowledge is increasingly becoming part of the development agenda; national initiatives and policies are emerging; civil society groups are forming a broad base of support; local initiatives are multiplying; and the number of development projects and programs integrating IK is increasing. Yet, some substantial challenges remain.

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Box 3. National IK Strategy in Uganda

In July 1999, the Uganda National Council for Science and Technology (UNCST) initiated a study supported by the World Bank, to explore the potential of utilizing IK in the agriculture and health sectors. This was the basis for a national workshop involving policy makers, scientists, development practitioners, NGO and CBO representatives, tradtional healers, and farmers to draft a national strategy and framework for action. This was the genesis of the Kampala Declaration* on Indigenous Knowledge for Sustainable Development. The Declaration urges the government to support the development of IK and planners to include IK in the national planning process. The strategy is to be implemented in several ways, such as including IK in Uganda's Poverty Eradication and Action Plan (PEAP). The World Bank has provided an Institutional Development Fund (IDF) grant to support the development of a national Centre for Indigenous Knowledge and the incorporation of IK into the operations of the health and agriculture ministries. A Steering Committee monitors the implementation process. The National Agricultural Research Organization has drafted a plan to incorporate IK in its activities.**

* First published in *Indigenous Knowledge and Development Monitor*, Vol. 8/1 March 2000.

** National Agricultural Research Organization (2001). "Integrating IK in Agricultural Research." Workshop report, Entebbe.

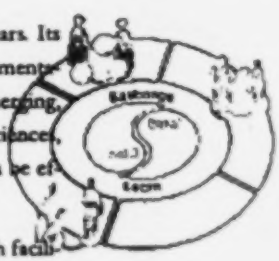
The priorities would be to:

- encourage more countries to formulate and implement *strategies for IK integration*
- enhance the capacity of *national and regional IK networks*
- promote the *local exchange and adaptation* of indigenous knowledge
- identify innovative mechanisms to *protect IK* in a way that fosters the further *development, promotion, validation, and exchange of IK.*

The following examples may demonstrate how some of these challenges can be addressed:

Efforts are already under way to support *national strategies* in Malawi, Kenya, Uganda, and Tanzania to mainstream IK, supported by the IK Program and, in the case of Tanzania, in partnership with the FAO Links project.

A global network of indigenous knowledge resource centers has emerged over the last ten years. Its members include academic institutions, NGOs, CBOs, and individuals engaged in the study, documentation, dissemination, and advocacy of indigenous knowledge. Regional networks are continuously emerging, such as PELUM, formed in some countries in East and Southern Africa to share and combine experiences, skills, and knowledge in smallholder agriculture. Active, efficient and member-driven networks can be effective disseminators and advocates of IK.



At the local level, the IK Program has helped to strengthen community-based institutions through facilitating community-to-community exchanges (C2C). A pilot C2C exchange was recently conducted in South Africa supported by the World Bank in partnership with the Global Mechanism of the Convention to Combat Desertification.

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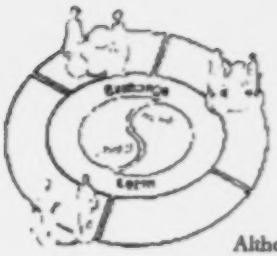

Box 4. Local exchange and adaptation in South Africa

The Rooibos tea-growing farmers of Wupperthal in the Western Cape Province were successfully exporting their tea to Europe. An NGO, EMG thought that other tea-growing communities could benefit from their experience. In June 2000, over a dozen smallholder Rooibos tea-growing farmers of Suid Bokkeveld visited their neighbors for discussions on crop quality, processing and marketing. The outcome: the visiting farmers went back to their communities, shared what they had learned, set up a farmers' co-operative, improved their post-harvest processing and secured a $15,000 order from an European importer.

Although IK has proven its validity over centuries there are areas where scientific validation may be required prior to the sharing of such IK practices beyond the original context and location. A case at hand is herbal medicine, where validation could help to provide assurances of safety and effectiveness (Box 5).

These examples also demonstrate that functioning partnerships of a variety of stakeholders covering community-based organizations, NGOs, academia, the private sector, research, academia and government, and the donor institutions can significantly enhance the chances of success in the use of IK for development. This holds especially true for addressing the issue of intellectual property rights (IPR). WIPO, a partner of the IK Program, has taken the lead in a global discussion and partnerships around the challenge of how to find innovative approaches to IPR as they apply to indigenous knowledge.

Innovative approaches are necessary because existing arrangements may not be applicable to the specifics of IK. The normal criteria for patenting a process do not exist with IK: Traditional knowledge is preserved through oral tradition and demonstration rather than documentation; more often than not it emerges gradually rather than in distinct increments. Only in rare cases is an industrial process concerned; an individual inventor is unlikely to be identified. Some initiatives may help, such as encouragement to local communities to register traditional practices. Practical, cost-effective and "indigenous" examples of documentation also exist. Other evolving forms of protection of IK include Material Transfer Agreements (MTA) involving the provision of material (resources or information) in exchange for monetary or non-monetary benefits. Examples of fair and equitable benefit sharing between users and custodians of traditional knowledge can be found in several countries today (Box 6).

Box 5. Traditional healers response to HIV/AIDS in Tanzania

In Pangani District traditional healers have treated the opportunistic diseases of over 2000 HIV/AIDS patients, using medicinal plants. Some terminally ill patients have reportedly lived longer by five years. The regional hospital has dedicated a ward to these healers to treat and counsel patients. The IK Program supported an exchange of experiences between healers, people living with AIDS and staff working with patients with similar groups across the country. A critical challenge is to leverage local and global knowledge systems to effectively resolve development challenges. To facilitate this process, the IK Program brokered a partnership between the TANGAAIDS Working Group of Pangani, and the US National Institutes of Health to cooperate on the scientific validation of the efficacy of these herbal treatments.[1]

[1] Scheinman, D.: (2000) An Integrated Program for Developing Medicinal Plants: A Case Study from Tanga, Tanzania; Paper presented to Medicinal Plants Forum for Commonwealth Africa, Cape Town.

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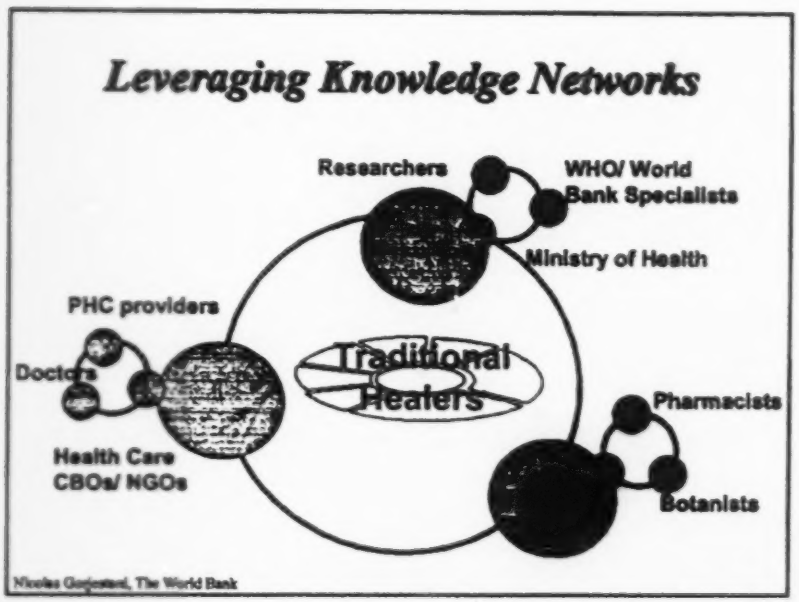
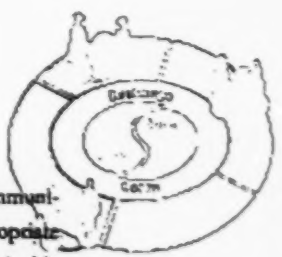
Box 6

In Cameroon, the US National Cancer Institute reportedly signed a contract with the government following the discovery of a forest plant species with a potential anti-AIDS chemical. Cameroon provides plant samples in return for payments which are used for community development projects.*

* Posey, D. and Dutfield G. (1996). "Beyond Intellectual Property: Toward Traditional Resource Rights for Indigenous Peoples and Local Communities." IDRC, Ottawa.

Regional agreements could also lead to cost effective forms of protection for local communities. For example, the 1996 Andean Pact adopted by Bolivia, Colombia, Ecuador, Peru and Venezuela, empowers the national authority and indigenous communities in each country, as the holders of traditional knowledge and resources, to grant prior informed consent in exchange for equitable returns. However, the need to address the issue of IPR of IK should not prevent the development and implementation of IK initiatives that are beneficial for communities and the development process as a whole.

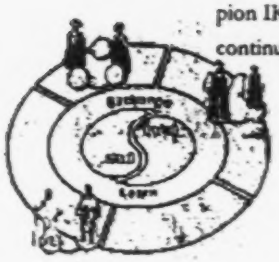




Conclusion

Indigenous knowledge is a critical factor for sustainable development. Empowerment of local communities is a prerequisite for the integration of IK in the development process. The integration of appropriate IK systems into development programs has already contributed to efficiency, effectiveness, and sustainable development impact. IK, like any other knowledge, needs to be constantly used, challenged, and further adapted to the evolving local contexts. Supporting local and regional networks of traditional practitioners and community exchanges can help to disseminate useful and relevant IK and to enable communities to participate more actively in the development process. While innovative mechanisms for the protection of

IK need to be developed, many indigenous knowledge practices can at the same time be integrated into local, national, regional, or even global development efforts. However, experience has shown that this cannot be done by one institution alone. Therefore, partnerships are needed to support this process at all levels. The Indigenous Knowledge for Development Program of the World Bank will continue to champion IK and join others in their efforts to harness indigenous knowledge for development in a process of continuous learning from local communities.



Nicolas Gorjestani is Chief Knowledge Officer, Africa Region, The World Bank. *This paper is based on a presentation made by the author at the UNCTAD Conference on Traditional Knowledge in Geneva, November 1, 2000. The paper was completed after the Conference and includes some additional material, which has since become available.*

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